REMARKS

Claims 1 to 4 and 6 to 33 are pending. Claim 5 has been canceled. Claims 22 to 36 have been withdrawn from consideration. Claims 1, 22, 28, and 31 are currently amended. Reconsideration of the application is requested.

§ 103 Rejections

Claims 1-2, 5-7 and 6-16 and 18-21 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Beall et al. (US 5,830,528).

The Examiner essentially states:

Beall et al. disclose compositions, in particular, intercalates and exfoliates thereof formed by contacting a layered phyllosilicate with a functional organic monomer (intercalant monomer), having at least one hydroxyl functionality and/or an aromatic ring, to sorb or intercalate the intercalant monomer or mixtures of intercalant monomers between adjacent phyllosilicate platelets. Patentee indicates that any swellable layered material that sufficiently sorbs the intercalant monomer to increase the interlayer spacing between adjacent phyllosilicate platelets to at least about 5 .ANG, preferably to at least about 10 .ANG may be used in the practice of the invention. Useful swellable, layered materials include phyllosilicates, such as smectite minerals. In accordance with another embodiment of the invention, the intercalates can be exfoliated and dispersed into one or more melt-processible thermoplastic and/or thermosetting 'matrix oligomers or polymers, or mixtures thereof. Bealle et al. indicate that the pentaerythritol which is used in the patented invention is commonly used in self-extinguishing, nondripping, flame-retardant compositions with a variety of polymers, including olefins, vinyl acetate, alcohols, methyl methacrylate, and urethanes. The pentaerythritol is used in conjunction with trimethylolpropane esters for solventless lacquer formulations. Patentee indicates that products of the patented invention containing phyllosilicate platelets, based on polyglycerol matrix monomers, are useful in surface-active agents, plasticizers, adhesives, lubricants, antimicrobial agents, medical specialties and dietetic foods. Patentee therefor suggests the use of the intercalates, which comprise pentaerythritol and acrylic esters, in both flame retardant and/or antimicrobial compositions. Vulcanizable and thermoplastic rubbers useful as matrix polymers in the practice of the invention include ethylene-propylene-diene terpolymers, and ethylene-acrylic acid copolymers. Other topically-active compounds can be included in the compositions of the invention in an amount sufficient to perform their intended function. These include, for example, zinc oxide. Beall suggests the components of applicant's claims. The selection of each of these components from the patented disclosure would have been obvious to the ordinary

practitioner of this art at the time of applicant's invention. See the abstract and claims and col. 8, line 50 through col. 14, line 34. A flame retardant synergist is any substance that aids in contributing flame retardancy to the compositions. It usually enhances the efficiency of the flame retardant agent. This synergist may in some cases be another flame retardant component. The use of flame retardant synergists is conventional and well documented in the art. Since applicant's claims do not indicate a specific synergist, any component in Beall et al. affording this enhancement in flame retardancy would function as a flame retardant synergist. At col. 13, line 10 through vol. 14, line 34, Beall et al. states that, "pentaerythritol is used in self-extinguishing, nondripping, flame-retardant compositions with a variety of polymers, including olefins, vinyl acetate and alcohols, methyl methacrylate, and urethanes. Phosphorus compounds are added to the formulation of these materials. When exposed to fire, a thick foam is produced, forming a fire-resistant barrier." The pentaerythritol and phosphorus compounds of Beall et al. would inherently function as a flame retardant synergist. Applicant's claims must be interpreted in the broadest sense. In the absence of a recitation to a specific flame retardant synergist and in the absence of an indication of unexpected results attributable to the use of a generic flame retardant synergist, this particular claim limitation of the present application is considered obvious over Beall et al.

The Applicant respectfully traverses for at least the following reasons. Careful reading of Beall shows that is does not appear to teach or suggest all of the limitations of Applicant's amended claim 1. Applicants amended claim 1 is, *inter alia*, to a composition that comprises a terpolymer of an ethylene-propylene-diene monomer (from about 30.0 wt% to about 80.0 wt%), a flame retardant (from about 10.0 wt% to about 30.0 wt%), and an antimicrobial agent (from about 0.2 wt% to about 0.4 wt%). The only antimicrobial agents in Beall are polyglycerols (see, for example, col. 15, lines 39-53) and propylene glycol (see col. 16, lines 29-37). The only flame retardant composition in Beall appears to be pentaerythritol (col. 14, lines 12-18). The Applicant respectfully asserts that pentaerythritol is not a polyglycerol (polyglycerols have ether linkages whereas pentaerythritol has no ether linkage). The Examiner has shown no teaching or suggestion in Beall to combine pentaerythritol with one or more polyglycerides in the intercalate of a phylosilicate and within an ethylene-propylene-diene terpolymer thermoplastic matrix to get Applicant's claimed invention. Furthermore, *arguendo,* if there were such a suggestion, Beall still does not describe, teach, or suggest the amounts asserted in Applicant's amended claim 1. As a result, the Examiner has not made a *prima facie* case of obviousness and the rejection should be withdrawn.

Furthermore, the Applicant finds unclear the statement, on page 4, of the Office Action of March 3, 2008, under the present rejection that "Each of Patel et al and Beall et al indicate that flame retardants may be used." The rejection is a §103(a) rejection over Beall et al and does not mention Patel et al. Yet the Examiner seems to be applying Patel with Beall in this rejection. The Applicant requests clarification of this point in case that was the intention of the Examiner, such as through a telephone discussion at the number indicated below.

Claims 2, 5-7 and 6-16 and 18-21 all depend upon amended claim 1 and add further limitations thereto. Since claim 1 has been shown to be patentable, likewise so are claims 2, 5-7 and 6-16 and 18-21.

The rejection of claims 1-2, 5-7 and 6-16 and 18- under 35 USC § 103(a) as purportedly being unpatentable over Beall et al. (US 5,830,528) has been overcome and the rejection should be withdrawn.

Claims 1-2, 5-7 and 6-16 and 18-21 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Patel et al. (US 6,638,993).

The Examiner essentially states:

Patel et al. disclose non-silicone vulcanized rubber articles made from at least a majority by weight of ethylene-propylene-diene modified (terpolymer) rubber (such as, without limitation, EPDM and/or NBR) that further include silver-based compounds to provide highly desirable long-term antimicrobial characteristics within the cured rubber articles. An object of the invention is to provide a vulcanized EPDM and/or NBR rubber-containing article, comprising filler components and plasticizers (such as silica~ metal salts, organic salts, calcium carbonate, metal oxides, ~and oils). The colored vulcanized rubber-containing article of the invention comprise at least one non-discoloring silver ion control release additive, such as those selected from the group consisting of fillers (such as calcium carbonate, china or calcined clay silane-coated or mixed bivalent metal silicates, aluminum trihydrate, and any mixtures thereof), at least one coloring agent to provide a color to the article other than black, and, optionally and at least one plasticizer (e.g., oils such as phthalate oils and paraffinic oils). Additionally, this invention encompasses a method of producing such a colored vulcanized.rubber article. Additionally, generally and preferably, certain fillers and, supplementally, oils (such as bivalent silicates, silane-coated or mixed silica, zinc oxide, clays, aluminum trihydrate salts, calcium carbonate, and other types that do not discolor silver antimicrobial-containing EPDM and/or NBR, as merely preferred

examples, rubber formulations) are incorporated into the compositions to provide both flexural modulus and structural integrity to vulcanized rubber articles. The preferred silver-based ion exchange material is an antimicrobial silver zirconium phosphate. Patel et al. provides for accelerators and flame retardants. See col. 9, lines 38-45. Since applicant's claims do not indicate a specific synergist, any component in Patel et al. affording enhancement in flame retardancy would function as a flame retardant synergist. Patel et al. is considered to provide incentive for the broadly claimed flame retardant synergist of applicant's claims.

The Examiner stated that while the particular flame retardant 1,2-bis(tetrabromophthalimide) ethane is not specifically disclosed by the references, it is a conventional halogenated flame retardant. It is well known in the art that halogenated compounds (particularly brominated and chlorinated compounds), provide flame retardant properties. Each of Patel et al. and Beall et al. indicates that flame retardants may be used. Applicant has provided for nothing of an unexpected nature by indicating a specific and conventional flame retardant component for use in the invention.

The Examiner stated that while this particular antimicrobial agent which comprises a salt complex of pyrithione is not specifically disclosed by the references, it is a conventional antimicrobial agent. Beall et al. and Patel et al. are specifically directed toward achieving antimicrobial properties. Applicant has provided no indication that he is achieving a property of an unexpected nature by using a conventional antimicrobial agent.

Applicant respectfully traverses this rejection for at least the following reasons. Patel et al does not teach or suggest all of the elements of Applicant's amended claim 1. Applicant's amended claim 1 requires a flame retardant that constitutes greater than 10.0% to about 30.0% by weight of the composition. Patel teaches (col. 9, lines 37-45) that other additives present within the vulcanized rubber article include flame retardants and that such components should be present, if at all, in rather low amounts, of from about 0.1 to about 10 pphr. There is no teaching or suggestion in Patel to use flame retardants at the level required by Applicant's amended claim. As a result, the Examiner has not made a *prima facie* case for obviousness. For at least this reason the rejection of Applicant's amended claim 1 is improper and should be withdrawn. Claims 2, 5-7, 6-16, and 18-21 all depend upon amended claim 1 and add further limitations thereto. Since amended claim 1 is patentable, likewise so are claims 1, 5-7, 6-16, and 18-27.

With respect to claims 9 and 18, the Applicant can find no teaching or suggestion of an acrylic co-agent in Patel. For at least this additional reason, the Applicant respectfully traverses the rejection of claims 9 and 18 over Patel.

The rejection of claims 1-2, 5-7 and 6-16 and 18-21 under 35 USC § 103(a) as purportedly being unpatentable over Patel et al. (US 6,638,993) has been overcome and should be withdrawn.

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (US patent No. 6,638,993) in view of Dekkers et al. (US Patent No. 5,147,920).

Patel et al. is discussed above. With respect to claim 8, Patel teaches that peroxides can be part of the composition (see abstract and various teachings in the spec). With respect to the amount of the terpolymer, Patel teaches that the rubber component is present in an amount of about 10 to 1000 parts of the entire composition (col. 6, lines 10-25). The amount of antimicrobial agent may range between 0.1 to 10% (col. 7, lines 20-25) and the amount of flame retardant may range 0.1 to 10 pphr (parts per hundred of resin). See col. 9, lines 40-45. See also the various formulations at columns 11, 12 and 13. Clearly the relative amounts of each component disclosed by Patel fall well within the claimed ranges of the respective components. Patel fails to teach use of 1,2-bis(tetrabromophthalimide) ethane as a flame retardant as required by instant claim 3. In that respect, Dekkers et al. relate to a polymer composition comprising glass fibers and flame retardants. Exemplary known flame retardants include 1,2-bis(tetrabromophthalimide) ethane of Dekkers in the composition of Patel as a flame retardant.

The Applicant respectfully traverses this rejection for at least the following reason. As admitted by the Examiner, Patel describes EPDM rubber that further includes silver-based compounds to provide highly desirable long-term antimicrobial characteristics within the cured rubber articles. The Examiner admits that the particular flame retardant, 1,2-bis(tetrabromophthalimide)ethane is not disclosed by Patel. The Examiner relies upon Dekkers for this element of Applicant's claim 3. As admitted by the Examiner, Dekkers teaches flame retardants that include 1,2-bis(tetrabromophthalimide)ethane and also teaches that other flame retardants provide less tracking resistance (col. 2, lines 57-64). However, Dekkers also teaches (col. 1, lines 38-41) that "one may obtain improved properties in particular an improved resistance by using a special type of glass fibers in combination with a special class of flame retardants." Patel does not disclose the special type of glass fibers ("milled glass fibers (see col. 2, lines 49-50 of Dekkers)) that are required by Dekkers to get favorable tracking resistance. As

such, there is no teaching or suggestion that would lead one of ordinary skill in the art to combine the flame retardant of Dekkers with the vulcanized rubber article of Patel to get Applicant's claim 3. As such, the Examiner has not made a *prima facie* case of obviousness and the rejection of claim 3 is improper and should be withdrawn. With respect to claim 8, Applicant has already shown that claim 8 is patentable over Patel (which discloses peroxide, for example, in col. 6, line 15). Dekkers does not mention a peroxide so the Applicant finds this rejection ambiguous and requests further clarification from the Examiner. Without further explanation, Applicant respectfully requests withdrawal of the rejection of claim 8.

The rejection of claims 3 and 8 under 35 U.S.C. 103(a) as being purportedly unpatentable over Patel et al. (US patent No. 6,638,993) in view of Dekkers et al. (US Patent No. 5,147,920) has been overcome and should be withdrawn.

Claim 4 stands rejected under 35 U.S.C. 103(a) as purportedly being unpatentable over Patel et al. (US Patent No. 6,638,993) in view of Yao (US Patent No. 6,551,608). Patel et al. is discussed above. Patel does not teach the use of pyrithione as an antimicrobial agent. Yao teaches porous plastic materials which comprise antiviral or antimicrobial properties. See col. 1, lines 65-67. The plastic materials may include ethylene-propylene-diene polymers (column 2, lines 10-20). Yao at col. 9, lines 1-5, notes that the pyrithione salt complex can be used as an antimicrobial agent. Since Yao teaches to use pyrithione salt complex as an antimicrobial agent, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to use such antimicrobial agent in the terpolymer composition of Patel with a reasonable expectation that it would function as taught by Yao.

Applicant respectfully traverses this rejection for at least the following reason. Yao discusses the use of porous materials that possess antiviral and/or antimicrobial properties (see abstract). There is no teaching or suggestion in Patel to use porous materials. In fact, the term, "porous" does not appear in Patel. There is no reference to flame retardants in Yao and one of ordinary skill in the art would not be motivated to take the pyrithione taught in Yao and combine it with the EPDM and flame retardant of Patel at least since Patel does not teach porous polymeric materials. As such, the Examiner has not made a *prima facie* case of obviousness and the rejection is unwarranted and should be withdrawn.

The rejection under 35 U.S.C. 103(a) as purportedly being unpatentable over Patel et al. (US Patent No. 6,638,993) in view of Yao (US Patent No. 6,551,608) has been overcome and should be withdrawn.

Claims 11, 12, 14, 15, 17, and 19-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (US Patent No. 6,638,993) in view of Anderson (US Patent No. 4,082,725) and further in view of Dekkers (US Patent No. 5,147,920) and still further in view of Hirano et al. (US Patent No. 5,871,883).

The Examiner noted that Patel et al. is discussed above. With respect to claim 11, Patel teaches that plasticizers can be used as part of the compositions (see the abstract). Exemplary plasticizers include paraffinic oils. See col. 3, lines 50-55. The skilled person in this art will appreciate that paraffinic oils are hydrocarbon oils. Patel fails to teach the use of antioxidants and flame retardant synergists as part of his composition. Note that applicant in his specification has stated that flame retardant synergists (i.e., flame enhancing agents) include antimony compounds such as antimony trioxide. See page 4, lines 12-18. The reference of Anderson teaches a flame retardant plastic composition that may contain an enhancing agent which enhances the flame retardancy of the flame retardant. Exemplary enhancing agents include antimony trioxide. See col. 4, lines 22-34. Anderson also teaches that the plastic composition may comprise antioxidants. See col. 4, lines 45-40. Regarding claim 12, neither Patel nor Anderson teach flame retardant which comprises 1,2 bis(tetrabromophthalimide) ethane. As pointed out above, Dekkers et al. relate to a polymer composition comprising glass fibers and flame retardants. Exemplary known flame retardants include 1,2 bis(tetrabromophthalimide) ethane. See col. 3, lines 50-51. Because it was known to use 1,2 bis(tetrabromophthalimide) ethane as a flame retardant, it would have been obvious to use the flame retardant enhancing agent such as antimony trioxide in the composition of Patel so as to enhance Patel's flame retardants. Since Anderson teaches the use of antioxidants as part of his flame retardant plastic composition, it would have been obvious for one skilled in the art to use antioxidants in the Patel composition. For claim 15, Patel teaches the use of silica and/or clay as part of his composition. See col. 3, lines 15-25. Regarding claim 17, Patel teaches that peroxides can be part of the composition (abstract). With respect to claim 19, Patel teaches that zinc oxide can be a filler in his composition. See col. 4, lines 51-55. Regarding claims 20 and 21, it was known in the prior art that carbon black can be used as a laser beam absorber. See Hirano et al. at col. 1, lines 55-61. Patel also teaches the use of carbon black in his composition. See col. 5, lines 55-58. Clearly then, Patel's carbon black would inherently function as a laser beam absorber and hence as an energy beam absorber.

The Applicant respectfully traverses for at least the following reasons. The Applicant has already shown that Patel does not teach or suggest all of the elements of amended claim 1. Applicant's amended claim 1 requires flame retardants in an amount greater than 10% to about 30% by weight of the composition and an antimicrobial agent in an amount from about 0.2% to about 0.4% by weight. Patel teaches the use of rather low amounts of flame retardants, from about 0.1 to about 10 pphr. Anderson teaches higher amounts of flame retardants (i.e., 12.2% shown in the examples in Table I). Additionally Anderson does not teach antimicrobial agents in an amount from about 0.2% to 0.4% by weight. Thus the combination of Patel and Anderson does not teach or suggest all of the limitations of Applicant's amended claim 1. Furthermore, one of ordinary skill in the art would not look to Anderson to find flame retardants that are used in amounts from about 0.1 to about 10 pphr. Dekkers or Hirano do not add these limitations since, as pointed out above, Dekkers relates to specific flame retardants with specific glass fibers and is improperly combined with Patel. As a result, the combination of Patel, Anderson, Dekkers, and Hirano do not teach or suggest all of the limitations of Applicant's claim 11 which depends upon amended claim 1. Thus, the Examiner has not made a *prima facie* case of obviousness and the rejection of claim 11 is improper. Claims 12, 14, 15, 17, and 19-21 depend upon claim 11 (and thus amended claim 1) and add further limitations thereto. Since claim 11 is patentable, likewise so are claims 12, 14, 15, 17, and 19-21.

The rejection of claims 11, 12, 14, 15, 17, and 19-21 under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (US Patent No. 6,638,993) in view of Anderson (US Patent No. 4,082,725) and further in view of Dekkers (US Patent No. 5,147,920) and still further in view of Hirano et al. (US Patent No. 5,871,883) has been overcome and should be withdrawn.

Claim 13 stands rejected under 35 U.S.C. 103(a) as purportedly being unpatentable over Patel et al. (US Patent No. 6,638,993) in view of Anderson (US Patent No. 4,082,725) and further in view of Yao (US Patent No. 6,551,608).

The Examiner stated that Patel et al. is discussed above. With respect to claim 13, neither Patel nor Anderson teach the use of a salt complex of pyrithione as an antimicrobial agent. Note however, that it was well known in the prior art to use such salt complex of pyrithione as an antimicrobial agent. See Yao at column 9, lines 1-5. As such, the use of the salt

complex of pyrithione as an antimicrobial agent in the composition of Patel would have been obvious.

The Applicant respectfully traverses this rejection for the same reasons delineated above. It is improper to combine Anderson with Patel to get all of the limitations of amended claim 1 and it is also improper to combine Yao with Patel as discussed above. Since the combinations have been shown to be improper in earlier discussion the Applicant asserts that the Examiner has not made a *prima facie* case of obviousness.

The rejection of claim 13 under 35 U.S.C. 103(a) as purportedly being unpatentable over Patel et al. (US Patent No. 6,638,993) in view of Anderson (US Patent No. 4,082,725) and further in view of Yao (US Patent No. 6,551,608) has been overcome and the rejection should be withdrawn.

Claims 16 and 18 stand rejected under 35 U.S.C. 103(a) as purportedly being unpatentable over Patel et al. (US Patent No. 6,638,993) in view of Anderson (US Patent No. 4,082,725) and further in view of Kozima et al. (US Patent No. 5,859,076).

The Examiner stated that Patel et al. is discussed above. Neither Patel nor Anderson teach the use of a silane coupling agent of claim 16. Kozima, however, teaches open cell foamed articles including silane grafted polyolefin articles. The polyolefins can be a terpolymer such as ethylene propylene diene (col. 2, lines 5-15). Regarding claim 18, Kozima teaches that the polyolefins may also contain acrylic components. See col. 6, lines 45-55. Kozima further teaches that the foamed material may contain antioxidants, pigments, colorants and antimicrobial agents. See col. 2, line 66-col. 3, line 10. Kozima further teaches that the silane can include vinyl silane, a known silane coupling agent. Compare applicant's specification at page 7, lines 18-20. Kozima further teaches that his foamed article has good crushing properties (abstract). The silane based article of Kozima also has long expansion cycles as well as good dimensional stability. See column 8, lines 55-65.

The Examiner stated that because Kozima teaches a composition which has antimicrobial properties as well as coupling agents, it would have been obvious to use the silane coupling agent of Kozima in the composition of Patel so as to obtain desirable properties such as good crushing properties and good dimensional stability. It would also have been obvious to use acrylic based polymers in the composition of Patel. The claimed invention, taken as a whole, would have been obvious in view of the prior art.

The Applicant respectfully traverses based upon the previously discussed improper combination of Patel and Anderson. Based upon earlier arguments, the Examiner has not made a *prima facie* case of obviousness and the rejection should be withdrawn.

The rejection of claims 16 and 18 under 35 U.S.C. 103(a) as purportedly being unpatentable over Patel et al. (US Patent No. 6,638,993) in view of Anderson (US Patent No. 4,082,725) and further in view of Kozima et al. (US Patent No. 5,859,076) has been overcome and should be withdrawn.

Request for Rejoinder

Withdrawn claims 22, 28, and 31 have been amended to incorporate all the claim features of currently amended patentable claim 1. Withdrawn claims 23-27 depend upon withdrawn amended claim 22, withdrawn claims 29-30 depend upon withdrawn amended claim 28, and withdrawn claim 32-33 depend upon withdrawn amended claim 31. Accordingly, it is submitted that claims 23-27, 29-30, and 32-33 are likewise patentable. Rejoinder of these claims is respectfully requested.

Withdrawn Claims 34-36

Applicant wishes to point out that claims 34-36 are listed as withdrawn from consideration. However, claims 34-36 depend upon claim 11 and add further limitations thereto. Claim 11 was elected as being a member of Group I, a composition, classified in Class 524, subclass 371+. Applicants respectfully request that the Examiner amend the restriction requirement and consider claims 34-36 in the elected class and also patentable.

Conclusion

In view of the accompanying amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the various claim objections and rejections set forth in the outstanding Office Action. Applicant also respectfully requests a telephone interview and can be reached as listed below.

Respectfully submitted,

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